WHAT IS CLAIMED IS:

1.   An image sensing system constituted by connecting an image sensing apparatus and image processing apparatus,

said image sensing apparatus comprising:

a storage medium for holding data on image sensing characteristic; and

an output unit for outputting the data on image sensing characteristic held in said storage medium to said image processing apparatus, and

said image processing apparatus comprising:

an input unit for receiving the data on image sensing characteristic output from said image sensing apparatus;

a generation unit for generating image sensing characteristic correction data on the basis of the data on image sensing characteristic received by said input unit; and

an image sensing characteristic correction unit for correcting an image sensing characteristic of image data received from said image sensing apparatus using the image sensing characteristic correction data generated by said generation unit.

2.   The system according to claim 1, wherein the image sensing characteristic is a linearity characteristic.

3.   The system according to claim 1, wherein the image sensing characteristic includes a characteristic for each of a plurality of colors to be sensed.

4.   The system according to claim 1, wherein said image sensing apparatus further comprises an image sensor which has a plurality of photoelectric conversion element arrays for respectively photoelectrically converting light of a plurality of colors, and

        the image sensing characteristic indicates spatial positional deviations of the plurality of colors of pixel signals obtained by said image sensor.

5.   The system according to claim 1, wherein the data on image sensing characteristic is output from said image sensing apparatus to said image processing apparatus upon starting up said image sensing apparatus at least.

6.   The system according to claim 1, wherein said generation unit generates the image sensing characteristic correction data by inversely converting the data on image sensing characteristic.

7.   The system according to claim 4, wherein said image sensing apparatus further comprises updating means for, when an exchangeable unit including said image sensor is exchanged, updating the data on image

sensing characteristic held in said storage medium in accordance with a characteristic of the unit.

8.   The system according to claim 1, wherein when the data on image sensing characteristic held in said storage medium is updated, said output unit outputs the updated data on image sensing characteristic to said image processing apparatus.

9.   The system according to claim 4, wherein said image sensing apparatus further comprises an optical element which brings about a change in spatial positional deviation amount of the plurality of colors of pixel signals obtained by the plurality of photoelectric conversion element arrays of said image sensor, and

     the data on image sensing characteristic includes basic data which indicates a basic amount of the positional deviation amount, and auxiliary data which indicates a change characteristic of the positional deviation amount.

10.   The system according to claim 9, wherein said optical element is controlled or adjusted in accordance with a magnification of an image sensed by said image sensor.

11.   The system according to claim 4, wherein the data on image sensing characteristic includes data which indicates a relationship between actual positions at

which light forms images on the plurality of photoelectric conversion element arrays, and design positions thereof.

12.   The system according to claim 4, wherein said image sensing apparatus further comprises an optical system for forming a document image on an imaging surface of said image sensor, and

said image sensor senses the document image.

13.   The system according to claim 4, wherein said image sensor has the plurality of photoelectric conversion element arrays which are separated at a predetermined line spacing.

14.   The system according to claim 4, wherein the plurality of colors are three colors including red (R), green (G), and blue (B), and the data on image sensing characteristic includes data indicating spatial deviation amounts among R, G, and B pixel signals.

15.   An image sensing apparatus which can be used upon being connected to an external image processing apparatus, comprising:

a storage medium for holding data on image sensing characteristic; and

an output unit for outputting the data on image sensing characteristic held in said storage medium to the external image processing apparatus.

16.   The apparatus according to claim 15, wherein the image sensing characteristic is a linearity characteristic.

17.   The apparatus according to claim 15, wherein the image sensing characteristic includes a characteristic for each of a plurality of colors to be sensed.

18.   The apparatus according to claim 15, further comprising an image sensor which has a plurality of photoelectric conversion element arrays for respectively photoelectrically converting light of a plurality of colors,

wherein the image sensing characteristic indicates spatial positional deviations of the plurality of colors of pixel signals obtained by said image sensor.

19.   The apparatus according to claim 15, wherein the data on image sensing characteristic is output from said image sensing apparatus to the external image processing apparatus in an initial communication therebetween.

20.   The apparatus according to claim 18, further comprising updating means for, when an exchangeable unit including said image sensor is exchanged, updating the data on image sensing characteristic held in said storage medium in accordance with a characteristic of the unit.

21.　The apparatus according to claim 15, wherein when the data on image sensing characteristic held in said storage medium is updated, said output unit outputs the updated data on image sensing characteristic to the

5　external image processing apparatus.

22.　The apparatus according to claim 18, further comprising an optical element which brings about a change in spatial positional deviation amount of the plurality of colors of pixel signals obtained by the

10　plurality of photoelectric conversion element arrays of said image sensor,

　wherein the data on image sensing characteristic includes basic data which indicates a basic amount of the positional deviation amount, and auxiliary data

15　which indicates a change characteristic of the positional deviation amount.

23.　The apparatus according to claim 22, wherein said optical element is controlled or adjusted in accordance with a magnification of an image sensed by said image

20　sensor.

24.　The apparatus according to claim 18, wherein the data on image sensing characteristic includes data which indicates a relationship between actual positions at which light forms images on the plurality of

25　photoelectric conversion element arrays, and design positions thereof.

25.   The apparatus according to claim 18, further comprising an optical system for forming a document image on an imaging surface of said image sensor,

wherein said image sensor senses the document image.

26.   The apparatus according to claim 18, wherein said image sensor has the plurality of photoelectric conversion element arrays which are separated at a predetermined line spacing.

27.   The apparatus according to claim 18, wherein the plurality of colors are three colors including red (R), green (G), and blue (B), and the data on image sensing characteristic includes data indicating spatial deviation amounts among R, G, and B pixel signals.

28.   An image processing apparatus which can be used upon being connected to an external image sensing apparatus, comprising:

an input unit for receiving the data on image sensing characteristic output from the external image sensing apparatus; and

an image sensing characteristic correction unit for correcting an image sensing characteristic of image data received from the external image sensing apparatus on the basis of the data on image sensing characteristic received by said input unit.

29.   The apparatus according to claim 28, wherein the image sensing characteristic is a linearity characteristic.

30.   The apparatus according to claim 28, wherein the image sensing characteristic includes characteristic for each of a plurality of colors to be sensed.

31.   The apparatus according to claim 28, wherein the external image sensing apparatus comprises an image sensor which has a plurality of photoelectric conversion element arrays for respectively photoelectrically converting light of a plurality of colors, and

the image sensing characteristic indicates spatial positional deviations of the plurality of colors of pixel signals obtained by said image sensor.

32.   The apparatus according to claim 28, wherein the data on image sensing characteristic is received from the external image sensing apparatus in an initial communication between the external image sensing apparatus and said image processing apparatus.

33.   The apparatus according to claim 28 further comprising a generation unit for generating the image sensing characteristic correction data by inversely converting the data on image sensing characteristic.

34. An image correction method in an image sensing system constituted by connecting an image sensing apparatus and image processing apparatus, comprising:

the correction step of correcting an image sensing characteristic of image data received from said image sensing apparatus on the basis of the data on image sensing characteristic of said image sensing apparatus.

35. The method according to claim 34, wherein the image sensing characteristic is a linearity characteristic.

36. The method according to claim 34, wherein the image sensing characteristic includes a characteristic for each of a plurality of colors to be sensed.

37. The method according to claim 34, wherein said image sensing apparatus comprises an image sensor which has a plurality of photoelectric conversion element arrays for respectively photoelectrically converting light of a plurality of colors, and

the image sensing characteristic indicates spatial positional deviations of the plurality of colors of pixel signals obtained by said image sensor.

38. The method according to claim 34, further comprising a communication step of sending data on image sensing characteristic held in advance in a

storage medium of said image sensing apparatus to said image processing apparatus.

39. The method according to claim 38, wherein the communication step includes a step of sending the data on image sensing characteristic from said image sensing apparatus to said image processing apparatus upon starting up said image sensing apparatus at least.

40. The method according to claim 34 further comprising a generation step of generating the image sensing characteristic correction data by inversely converting the data on image sensing characteristic.

41. A computer program product comprising a computer usable medium having computer readable program code means embodied in said medium for an image correction method in an image sensing system constituted by connecting an image sensing apparatus and image processing apparatus, said product including

a computer readable program code means for correcting an image sensing characteristic of image data received from said image sensing apparatus on the basis of the data on image sensing characteristic of said image sensing apparatus.

42. An image scanning system which comprises an image scanning apparatus, an image processing apparatus, and a connection unit that connects said image scanning

apparatus and said image processing apparatus to be able to communicate with each other,

said image scanning apparatus comprising:

a light source which can illuminate a document and a reference member serving as a color reference;

an image scanning unit for scanning an image on the document and the reference member illuminated by said light source; and

a controller for controlling, at a system startup timing, to illuminate the reference member by said light source, scan the illuminated reference member by said image scanning unit, and transfer information corresponding to a value obtained by scanning the reference member to said image processing apparatus via said connection unit, and

said image processing apparatus comprising:

a color correction unit for executing a color correction process of an image scanned by said image scanning apparatus using the information transferred from said image scanning apparatus.

43. The system according to claim 42, wherein said controller transfers as the information a color correction coefficient corresponding to the value obtained by scanning the reference member to said image processing apparatus via said connection unit.

44.   The system according to claim 42, wherein the system startup timing corresponds to a power ON timing of said image scanning apparatus and said image processing apparatus.

5   45.   The system according to claim 42, wherein said image scanning apparatus has a state transition function of changing an apparatus state to a standby state in which power supply to at least one unit of said image scanning apparatus is shut off, and

10   restoring from the standby state to a scan ready state of the document, and the system startup timing corresponds to a restoration timing from the standby state to the scan ready state of the document.

46.   The system according to claim 42, wherein the

15   system startup timing corresponds to a scan operation start timing of said image scanning apparatus.

47.   The system according to claim 43, wherein said image scanning apparatus holds a plurality of color correction coefficients which are measured in advance,

20   and said controller selects a corresponding one of the plurality of color correction coefficients in accordance with the value obtained by scanning the reference member and transfers the selected color correction coefficient to said image processing

25   apparatus as the information.

48.   The system according to claim 43, wherein when the value obtained by scanning the reference member falls with a range that exceeds a pre-set threshold value, said image scanning apparatus fixes the color correction coefficient at a given value.

49.   The system according to claim 42, wherein said image scanning apparatus further comprises a storage medium, and

said controller stores the value obtained by scanning the reference member in said storage medium every time the number of scan times of the document reaches a predetermined value.

50.   The system according to claim 42, wherein said image scanning apparatus further comprises a storage medium, and

said controller controls to illuminate the reference member by said light source and to scan the illuminated reference member by said image scanning unit at a predetermined time interval, and stores the value obtained by scanning the reference member at the predetermined time interval in said storage medium.

51.   The system according to claim 42, wherein said image scanning apparatus further comprises:

a storage medium for storing the value obtained by scanning the reference member; and

an initialization unit for initializing the value stored in said storage medium when the light source has been exchanged.

52.   The system according to claim 42, wherein when said light source has been exchanged, said image scanning apparatus transfers light source exchange information indicating exchange of said light source to said image processing apparatus via said connection unit, and

said image processing apparatus further comprises an informing unit for informing that said light source has been exchanged on the basis of the transferred light source exchange information.

53.   The system according to claim 45, wherein said image scanning apparatus further comprises a storage medium, and

upon shutting off power supply to at least one unit of said image scanning apparatus, said controller controls to illuminate the reference member by said light source and to scan the illuminated reference member by said image scanning unit before the power supply shutoff, and stores the value obtained by scanning the reference member in said storage medium.

54.   The system according to claim 43, wherein said image scanning apparatus further comprises a storage medium, and

said controller determines the color correction coefficient in accordance with a value stored in said storage medium, and transfers the determined correction coefficient to said image processing apparatus.

5 55. An image scanning apparatus which can be connected to an external image processing apparatus via a connection unit, comprising:

a light source which can illuminate a document and a reference member serving as a color reference;

10 an image scanning unit for scanning an image on the document and the reference member illuminated by said light source; and

a controller for controlling, at an apparatus startup timing, to illuminate the reference member by

15 said light source, scan the illuminated reference member by said image scanning unit, and transfer information corresponding to a value obtained by scanning the reference member to the external image processing apparatus via the connection unit.

20 56. The apparatus according to claim 55, wherein said controller transfers as the information a color correction coefficient corresponding to the value obtained by scanning the reference member to the external image processing apparatus via the connection

25 unit.

57. The apparatus according to claim 55, wherein the apparatus startup timing corresponds to a power ON timing of said image scanning apparatus and the external image processing apparatus.

58. The apparatus according to claim 55, wherein said image scanning apparatus has a state transition function of changing an apparatus state to a standby state in which power supply to at least one unit of said image scanning apparatus is shut off, and restoring from the standby state to a scan ready state of the document, and the apparatus startup timing corresponds to a restoration timing from the standby state to the scan ready state of the document.

59. The apparatus according to claim 55, wherein the apparatus startup timing corresponds to a scan operation start timing of said image scanning apparatus.

60. The apparatus according to claim 56, wherein said image scanning apparatus holds a plurality of color correction coefficients which are measured in advance, and said controller selects a corresponding one of the plurality of color correction coefficients in accordance with the value obtained by scanning the reference member and transfers the selected color correction coefficient to the external image processing apparatus as the information.

61.   The apparatus according to claim 56, wherein when the value obtained by scanning the reference member falls with a range that exceeds a pre-set threshold value, said image scanning apparatus fixes the color correction coefficient at a given value.

62.   The apparatus according to claim 55 further comprising a storage medium,

wherein said controller stores the value obtained by scanning the reference member in said storage medium every time the number of scan times of the document reaches a predetermined value.

63.   The apparatus according to claim 55 further comprising a storage medium,

wherein said controller controls to illuminate the reference member by said light source and to scan the illuminated reference member by said image scanning unit at a predetermined time interval, and stores the value obtained by scanning the reference member at the predetermined time interval in said storage medium.

64.   The apparatus according to claim 55 further comprising:

a storage medium for storing the value obtained by scanning the reference member; and

an initialization unit for initializing the value stored in said storage medium when the light source has been exchanged.

65.   The apparatus according to claim 55, wherein when said light source has been exchanged, said image scanning apparatus transfers light source exchange information indicating exchange of said light source to the external image processing apparatus via the connection unit.

66.   The apparatus according to claim 58 further comprising a storage medium,

wherein upon shutting off power supply to at least one unit of said image scanning apparatus, said controller controls to illuminate the reference member by said light source and to scan the illuminated reference member by said image scanning unit before the power supply shutoff, and stores the value obtained by scanning the reference member in said storage medium.

67.   The apparatus according to claim 56 further comprising a storage medium,

wherein said controller determines the color correction coefficient in accordance with a value stored in said storage medium, and transfers the determined correction coefficient to the external image processing apparatus.

68.   An image processing apparatus which can be connected to an external image scanning apparatus via a connection unit, comprising:

a color correction unit for executing a color correction process of an image scanned by the external image scanning apparatus using information transferred therefrom.

5   69.   The apparatus according to claim 68, wherein the information is a color correction coefficient.

70.   The apparatus according to claim 68, further comprising an informing unit for informing the information upon receiving information indicating

10 exchange of a light source from the external image scanning apparatus.

71.   A color correction method for executing, in a system which comprises a light source which can illuminate a document and a reference member serving as

15 a color reference, and scans an image on the document and the reference member illuminated by said light source, a color correction process of the scanned image using a color correction coefficient, comprising:

a step of illuminating the reference member by

20 said light source, and scanning the illuminated reference member at a startup timing of said system; and

a step of changing the color correction coefficient in accordance with a value obtained by

25 scanning the reference member.

72.   The method according to claim 71, wherein the startup timing corresponds to a power ON timing of said system.

73.   The method according to claim 71 further comprising:

a step of changing a system state to a standby state in which power supply to at least one unit of said system is shut off; and

a step of restoring from the standby state to a scan ready state of the image on the document,

wherein the startup timing corresponds to a restoration timing from the standby state to the scan ready state of the image on the document.

74.   The method according to claim 71, wherein the startup timing corresponds to a scan operation start timing of the document.

75.   The method according to claim 71 further comprising a step of selecting a corresponding one of a plurality of color correction coefficients, which are measured in advance, in accordance with the value obtained by scanning the reference member, and setting the selected color correction coefficient.

76.   The method according to claim 71 further comprising a step of fixing, when the value obtained by scanning the reference member falls with a range that

exceeds a pre-set threshold value, the color correction coefficient at a given value.

77.   The method according to claim 71 further comprising a step of storing the value obtained by scanning the reference member in a storage medium every time the number of scan times of the document reaches a predetermined value.

78.   The method according to claim 71 further comprising a step of controlling to illuminate the reference member by said light source and to scan the illuminated reference member at a predetermined time interval, and storing the value obtained by scanning the reference member at the predetermined time interval in a storage medium.

79.   The method according to claim 71 further comprising:

a step of storing the value obtained by scanning the reference member in a storage medium; and

a step of initializing the value stored in the storage medium when the light source has been exchanged.

80.   The method according to claim 71, further comprising a step of controlling, upon shutting off power supply to at lest one unit of said system, to illuminate the reference member by said light source and to scan the illuminated reference member before the

power supply shutoff, and storing the value obtained by scanning the reference member in a storage medium.

81.   A method of controlling an image scanning apparatus which can be connected to an external image

5   processing apparatus via a connection unit, comprises a light source that can illuminate a document and a reference member serving as a color reference, and scans an image on the document and the reference member illuminated by said light source, comprising:

10   the step of illuminating the reference member by said light source, and scanning the illuminated reference member at a startup timing of said apparatus;

            the step of changing a color correction coefficient in accordance with a value obtained by

15   scanning the reference member; and

            the step of transferring information corresponding to the value obtained by scanning the reference member to the external image processing apparatus.

20   82.   A color correction method in an image processing apparatus which can be connected to an external image scanning apparatus via a connection unit, comprising:

            the step of receiving information from the external image scanning apparatus;

25   the step of receiving a scanned image from the external image scanning apparatus; and

the step of executing a color correction process
of the image using the information.

83.   A computer program product comprising a computer
usable medium having computer readable program code
5   means embodied in said medium for a color correction
method for executing, in a system which comprises a
light source which can illuminate a document and a
reference member serving as a color reference, and
scans an image on the document and the reference member
10   illuminated by said light source, a color correction
process of the scanned image using a color correction
coefficient, said product including:

first computer readable program code means for
illuminating the reference member by said light source,
15   and scanning the illuminated reference member at a
startup timing of said system; and

second computer readable program code means for
changing the color correction coefficient in accordance
with a value obtained by scanning the reference member.

20   84.   A computer program product comprising a computer
usable medium having computer readable program code
means embodied in said medium for a method of
controlling an image scanning apparatus which can be
connected to an external image processing apparatus via
25   a connection unit, comprises a light source that can
illuminate a document and a reference member serving as

a color reference, and scans an image on the document
and the reference member illuminated by said light
source, said product including:

first computer readable program code means for
illuminating the reference member by said light source
and scanning the illuminated reference member at a
startup timing of said apparatus;

second computer readable program code means for
changing a color correction coefficient in accordance
with a value obtained by scanning the reference member;
and

third computer readable program code means for
transferring information corresponding to the value
obtained by scanning the reference member to the
external image processing apparatus.

85.   A computer program product comprising a computer
usable medium having computer readable program code
means embodied in said medium for a color correction
method in an image processing apparatus which can be
connected to an external image scanning apparatus via a
connection unit, said product including:

first computer readable program code means for
receiving information from the external image scanning
apparatus;

second computer readable program code means for receiving a scanned image from the external image scanning apparatus; and

third computer readable program code means for executing a color correction process of the image using the information.

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